李明东

个人主页：mingdong-li.github.io

出生年月:1995.12　联系方式：+86 15221361908　+852 62059030　Email: mlidr@connect.ust.hk

教育经历

香港科技大学 *2021.09 - 2025.04 (expected)*
博士在读，PhD in Individualized Interdisciplinary Program (Robotics and Autonomous System)
Computational Cognitive Engineering Lab
导师: Prof. Yiwen WANG, Prof. Qifeng CHEN (co-supervision)

浙江大学 *2018-2021*
硕士，机械设计及理论
流体动力与机电系统国家重点实验室
导师: 冯毅雄教授 (谭建荣院士团队)

同济大学 *2013-2018*
学士，机械设计制造及其自动化
中德机械工程创新试验区 (荣誉班级)

研究兴趣

脑机接口，类脑智能，AI4Neuroscience，产品智能设计

当前工作

1. **Mingdong Li**, Shuhang Chen, Zhiwei Song, Xiang Zhang, Camilo Libedinsky, Rosa So, Yiwen Wang*. Assessing Modifications of Functional Neural Connectivity in Point Process Filter for Neuroprosthetic Control, ***IEEE Transactions on Biomedical Engineering***. *(即将提交)*
2. Zhiwei Song, Xiang Zhang, **Mingdong Li**, Jieyuan Tan, Yiwen Wang*. An Online Knowledge Transfer Framework for Task Learning in Brain-Machine Interfaces, ***IEEE Transactions on Neural Systems and Rehabilitation Engineering***. *(即将提交)*
3. **Mingdong Li**, Shuhang Chen†, Xiang Zhang, Yiwen Wang*. Neural Correlation Integrated Adaptive Point Process Filtering on Population Spike Trains, ***IEEE Transactions on Neural Systems and Rehabilitation Engineering***, 2024. *(返修中, †: co-first author)*

论文发表（期刊）

1. **Mingdong Li**, Shanhe Lou*, Hao Zheng, Yixiong Feng, Yicong Gao, Siyuan Zeng, Jianrong Tan. A Cognitive Analysis-based Key Concepts Derivation Approach for Product Design, 2024, ***Expert Systems With Applications*** *(IF=7.5)*.
2. **Mingdong Li**, Shanhe Lou*, Yicong Gao, Hao Zheng, Bingtao Hu, Jianrong Tan. A Cerebellar Operant Conditioning-inspired Constraint Satisfaction Approach for Product Design Concept Generation, 2023, ***International Journal of Production Research*** *(IF=7.0)*.
3. Xuanyu Wu, Zhaoxi Hong*, Yixiong Feng, **Mingdong Li**, Shanhe Lou, Jianrong Tan. A Semantic Analysis-driven Customer Requirements Mining Method for Product Conceptual Design, 2022, ***Scientific Reports*** *(IF=3.8)*.
4. Yixiong Feng, **Mingdong Li**, Shanhe Lou*, Yicong Gao, Jianrong Tan. A Digital Twin-Driven Method for Product Performance Evaluation Based on Intelligent Psycho-Physiological Analysis, 2021, ***ASME Journal of Computing and Information Science in Engineering*** *(IF=2.6)*.

论文发表（会议/专利）

1. **Mingdong Li**, Mingyi Wang, Yiwen Wang*. An Adaptive Superposition Point Process Model with Neuronal Encoding Engagement Identification, ***2024 46th Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC)*** *(Oral)*.

2. Zixu Wang, Shuhang Chen†, **Mingdong Li**, Yiwen Wang*. Tracking Dynamic Conditional Neural Correlation during Task Learning, ***2024 46th EMBC*** *(†: co-first author. Oral).*
3. **Mingdong Li**, Jieyuan Tan, Zhiwei Song, Yiwen Wang*. Modeling Neural Population Dynamics in a Point Process Filter for Neuroprosthetics Control, ***Annual Conference of International Association of Neurorestoratology (IANR) 2024*** *(Poster).*
4. **Mingdong Li**, Shuhang Chen, Zhijia Zhao, Yiwen Wang*. Tracking the Dynamic Functional Neural Connectivity via Conjugate Gradient Optimization, ***2023 45th EMBC*** *(Oral).*
5. **Mingdong Li**, Shuhang Chen, Xi Liu, Zhiwei Song, Yiwen Wang*. Modeling Neural Connectivity in a Point-Process Analogue of Kalman Filter, ***2022 44th EMBC*** *(Poster).*
6. 冯毅雄, **李明东**, 高一聪. CN110090818B, 发明专利授权,2020
7. 李梦茹, 张引强, 徐楠婕, **李明东**, 刘铄. CN106127958B, 发明专利授权,2018

项目经历与活动组织

1. HKUST-北京天坛医院神经外科, 记忆编码研究 *2024.10-至今*
   - 主导开展帕金森患者记忆任务中黑质（substantia nigra）神经元编码分析
2. Computational Cognitive Engineering Lab 大鼠电极植入手术、行为训练负责人 *2022.9-2024.9*
   - 组织开展大鼠 M1/mPFC 脑区微丝电极植入手术 30 余场
   - 组织开展大鼠压杆行为训练，累计记录超 130 天
   - 行为数据与神经信号采集设备的维护、更新
3. 会议组委会, 4th International Workshop on Neural Engineering & Rehabilitation *2023.08*
4. 会议组委会, 3rd International Workshop on Neural Engineering & Rehabilitation *2022.05*
5. 国家自然科学基金面上项目：支持设计认知的机械产品创新设计理论、方法及应用研究. 参与
6. 国家重点研发项目课题：复杂产品全生命周期价值链协同平台研发. 参与

学术服务及教学工作

1. 审稿人：ISBI2025, NER2025, TIV, 图学学报
2. 学生指导：胡天翊，中国科学技术大学本科生，HKUST PhD (2025 秋季入学)
   - 指导神经脉冲信号的点过程建模分析 *2024.6-2024.9*
3. 学生指导：吴轩宇，浙江大学博士生
   - 指导开展产品设计认知实验，语言与 EEG 数据处理，学术论文写作 *2020.9-2022.9*
4. 课程助教, ELEC4130 Machine Learning on Images *2023* 春季学期
5. 课程助教, EMIA4110 Practical Machine Learning *2024* 春季学期

个人技能

1. SD Rat 双脑区微丝电极植入手术
2. 动物行为训练系统、神经信号采集系统搭建与应用
3. 编程: Python/Matlab/C++/Pytorch toolbox
4. 语言: 中文（母语），英语（熟练），德语（中等）

国际合作

Prof. Jose Principe, University of Florida
Prof. Zahra Monfared, Heidelberg University
Prof. Camilo Libedinsky, National University of Singapore

个人荣誉及奖项

DAAD AInet fellowship (AI4Science), 德国学术交流中心 *2024.10*
NextGen Scholar Award, IEEE Annual International Conference of EMBS *2024.06*
浙江大学研究生毕业学年奖学金 (前 1%) *2021.03*
2019 之江杯全球人工智能竞赛-多目标跟踪赛道，优胜奖（6-12 名），之江实验室 *2019.10*
第七届全国大学生机械设计创新竞赛，一等奖 *2016.07*
同济大学学术奖学金，二等 2 次、三等 1 次 *2013-2018*